Portland Harbor Meeting Feb 17, 2009 B.Shorr **NOAA**

LWG GIS Tool "remedial scenario" based on PRG (Preliminary Remediation Goal)

- creates contours showing delineation of cells to be removed above PRG based on interpolation (Natural Neighbor provided)
- Natural Neighbors is a subclass of Thiessen Polygons- essentially smooths the boundaries between points.
- Option to additionally create contour showing the cells to be removed to get down to a "site wide" average
- Intended as risk management tool
- Agreement on AOPC hoped for and expedite FS beginning
- Python script- requires ArcView and Spatial Analyst
- ? Smaller scale than site wide
    - Sub-areas to summarize
- Data treatments-
    - QA level highest
    - Dredged areas removed

Recommendations:

1. **Identify objectives:**
    a. Better understanding of distribution of contaminants and areal extent relative to PRGs
    b. Familiarity with interpolation methodologies and what the modeling results depict
    c. Eco and HH risk scales (e.g. river-wide vs. sub-area)
    d. How this information will inform AOPC selection and FS beginning

2. **Recommend evaluating interpolations of key contaminants minimum**
    a. Surface Sediment
        i. Thiessen polygons (understand distribution of contaminants and sampling intensity)
        ii. Natural Neighbors (subclass of Thiessen)
        iii. Kriging/IDW- both difficult for such a long stretch of river
    b. Subsurface Sediment queries
        i. At a minimum, it is easy to generate subsurface sediment queries to use in context with surface sediment
        ii. Interpolate subsurface sediment slices for example 30-60 cm, 60-90 cm etc. Can use USEPA FIELDS tool in ArcGIS 9.2 (maybe 9.3?) to create depth weighted intervals. Can also subset data and filter out very long intervals (e.g. 8 feet) that may confound analysis

3. **Evaluate several PRG remedial scenarios**

a. Site based and select several scales- sub-area based on receptors and risk management
    i. River miles by side of river
b. Generate grids representing removal areas. Contour lines are good, but the underlying grids allow you to easily estimate area/volume. These are not hard to generate either using LWG Tool or USEPA Fields ArcGIS 9.2/9.3 Remediation Tools
c. Range of PRG's graphed with area removed vs. concentration to show relationship between area and site-wide/sub-area-wide concentrations.